

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 724 951 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
19.03.1997 Bulletin 1997/12

(51) Int. Cl.<sup>6</sup>: B29D 30/70, B29D 30/44

(43) Date of publication A2:  
07.08.1996 Bulletin 1996/32

(21) Application number: 96101260.6

(22) Date of filing: 30.01.1996

(84) Designated Contracting States:  
DE FR GB IT NL

(30) Priority: 06.02.1995 US 384053

(71) Applicant: THE GOODYEAR TIRE & RUBBER  
COMPANY  
Akron, Ohio 44316-0001 (US)

(72) Inventor: McLaughling, James Lee  
Akron, Ohio 44319 (US)

(74) Representative: Leitz, Paul  
Goodyear Technical Center-Luxembourg  
Patent-Department  
L-7750 Colmar-Berg (LU)

### (54) Dual gumstrip applicator for tire cord belts

(57) A method and apparatus is described for applying unvulcanized gumstrips (11) in precise overlapping relation on the marginal edges (12,13) of an unvulcanized tire reinforcement belt or breaker (14) to enhance the adhesion between the reinforcement belt or breaker and surrounding components of a finished, vulcanized tire. The method and apparatus comprise a number of important features; namely, tensioning the gumstrips as they pay out from a letoff device (21), reeving the gumstrips, in tension, at least partially around a pair of barrel-shaped rollers (23) which precisely locate the gumstrips for subsequent contact with a belt as it moves

in a horizontal pathway, providing a specially contoured roller (25) for applying the gumstrips to the moving belt, removing a protective cover sheet (20) from each gumstrip at a unique angle where the resistance to separating the two components is minimized, and folding any portions of the gumstrips overhanging the marginal edges of the belt, at a plurality of stations which employ at least two sets of rollers (32,37,39,56) which are resiliently and horizontally preloaded to accommodate variations in the width of the belts being processed.

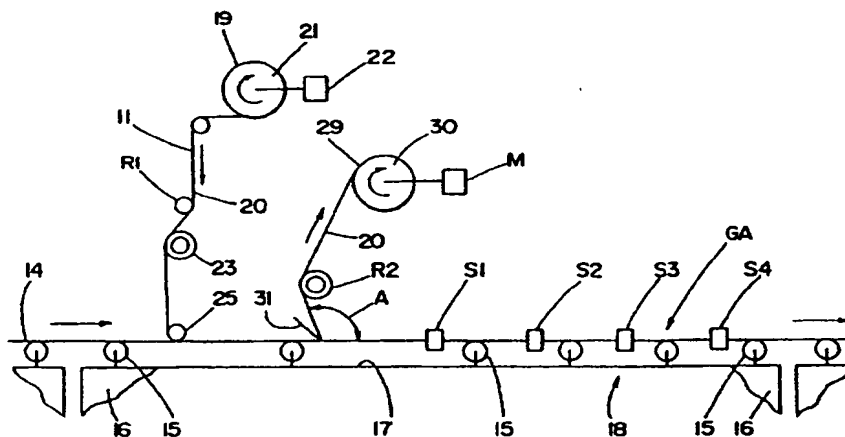


Fig. 2

EP 0 724 951 A3



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 96 10 1260

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y A	US-A-4 750 966 (KOLLER HANS) 14 June 1988  * column 4, line 4 - line 63; figure 1 * * column 5, line 14 - line 18; figures 1,2 *	1 4,5,11 7,9,10	B29D30/70 B29D30/44
Y	GB-A-1 588 780 (HOECHST AG) 29 April 1981 * the whole document *	4,5,11	
A	US-A-5 004 516 (Y. KOGA ET AL.) 2 April 1991 * column 1, line 12 - line 60; figures 6-10 * * column 3, line 8 - column 4, line 20; figures 1-5 *	1,6,7,9, 11,12	
A	JP-A-48 095 479 (YOKOHAMA GOMU)  * figures 1-12 *	1,6,7,9, 11,12	
A	JP-A-49 133 481 (MITSUBISHI HEAVY IND.) * figures 9,11,12 *	1,6-13	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B29D B31F B29C
A	FR-A-2 253 619 (GOODYEAR TIRE & RUBBER) 4 July 1975 * figures 1-9 *	7-10,12, 13	
A	US-A-4 410 390 (FARRELL ROBERT E) 18 October 1983 * column 5, line 36 - line 50; figures 1,2,11 *	7,9,12	
A	US-A-3 586 581 (TODD CHARLES E) 22 June 1971 * the whole document *	1,11	
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>23 January 1997</b>	Examiner <b>Fregosi, A</b>
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 (03/92) (P04/C01)